

REMARKS

Claims 1-5 and 15-17 are rejected, and claims 7-9 and 11-14 are withdrawn as being directed to a non-elected invention.

Claim 1 is objected to with respect to an informality at line 14 requiring a grammatical correction and with respect to the phrase “a fluorine compound having a linking group” in option “(d).”

In response, claim 1 and withdrawn claim 7 have been amended as suggested by the Examiner to use “a” at line 14 and to delete “having a linking group” describing the fluorine compound (d). There is no change in claim scope. Withdrawal of the objection is respectfully requested.

Claims 1-5 and 15-17 were rejected under 35 U.S.C. § 112, first paragraph. The Examiner considered that the limitations of option “(c)” do not find support in the specification as originally filed.

In accordance with the Examiner’s suggestion, option “(c)” in claims 1 and 7 has been limited to the description bridging pages 21-22 of the specification, which is a description of Polymer-D-SiX₃. Specifically, when compound (c) is represented by Polymer-D-SiX₃, Polymer is defined as a polymer structure group obtained by polymerizing a monomer which has a fluoroalkyl group having 5 or less carbon atoms.

Withdrawal of the foregoing rejection is respectfully requested.

Claims 1-5 and 15-17 were rejected under 35 U.S.C. § 112, second paragraph. The Examiner considered option “(c)” as being indefinite because the variable “p” is not present in the formula -S(CH₂)₂OCONH(CH₂)₂ that precedes it.

In response, claims 1 and 7 have been amended to correct the typographical error in the formula. Withdrawal of the foregoing rejection is respectfully requested.

Claims 1-5 and 15-17 were rejected under 35 U.S.C. § 103(a) as being unpatentable over JP 2002-023356 to Ishida (JP '356) in view of US Patent 4,687,707 to Matsuo et al. Ishida was cited as disclosing an anisotropic material having an alternating line pattern comprised of first (14) and second (17) self-organization organic thin films, where the first self-organization film is comprised of a fluoroalkyl silane and a conductive material is formed above the second self-organization film. The Examiner acknowledged that Ishida does not disclose any of the fluorine-containing organic silane compounds as claimed in claims 1 and 17.

Matsuo et al was cited as disclosing a low reflectance transparent material having antisoiling properties that can be used on small size precision optical parts, and specifically is said to suggest the use of perfluoroalkyl group-containing compounds. Matsuo et al was further cited as disclosing that heptadecafluoro tetrahydro decyltrichlorosilane is an equivalent for urethane-containing linkages within the scope of option "(d)" of the claimed invention (citing col. 5, line 38) and perfluoroisopropyl silanes that are said to be within the scope of option "(a)" (citing col. 5, lines 30-33).

The reason for rejection was that because Ishida and Matsuo et al are said to be drawn to the same perfluoroalkyl silane compounds that are both used for antisoiling, namely, liquid repellent purposes, it would have been obvious to substitute the heptadecafluoro tetrahydro decyltrichlorosilane of Ishida with any of the compounds of Matsuo et al including the perfluoroisopropyl silanes disclosed therein. As motivation for making the suggested substitution, the Examiner considered that all of the compounds are known to have low reflectance and good antisoiling properties for optical articles, and that Matsuo et al recognized

that a larger number of carbon atoms in the perfluoroalkyl group is economically unfeasible (col. 4, lines 13-20).

Claims 1-5 and 15-17 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Ishida in view of EP 1041652 to Katz et al and Matsuo et al.

Katz et al was cited as teaching the use of organic semiconductor materials as a functional material for fabricating circuitry, which materials can be bound to fluorinated silane surfaces. Again, the basis for rejection was that Ishida and Matsuo et al are said to be drawn to the same perfluoroalkyl silane compounds that are both used for antisoiling, such that it would have been obvious to substitute an equivalent compound of Matsuo et al for the silane of Ishida.

As to substitution of equivalent compounds, Applicants respond as follows.

The Examiner, in the Office Action, states "They (Matsuo, USP 4,687,707) disclose heptadecafluoro tetrahydro decyltrichlorosilane (col. 4, lines 45-47) as being an equivalent for urethane containing linkages that read on option "(d)" (col. 5, line 38) and perfluoroisopropyl silanes that read on option "(a)" (col. 5, lines 30-33)" (page 5, lines 4-8 of the Office Action). This statement is in error. Heptadecafluoro tetrahydro decyltrichlorosilane is not an equivalent for urethane-containing linkages that read on option "(d)". Heptadecafluoro tetrahydro decyltrichlorosilane (col. 4, lines 45-47), namely, $\text{CF}_3(\text{CF}_2)_7\text{C}_2\text{H}_4\text{SiCl}_3$ does not have an Rf group which is a perfluoroalkyl group having 5 or less carbon atoms. $\text{CF}_3(\text{CF}_2)_7\text{C}_2\text{H}_4\text{SiCl}_3$ has a perfluoroalkyl group having 8 carbon atoms.

Matsuo et al might disclose a silane having a perfluoroalkyl group having 5 or less carbon atoms, as in component (d) defined in present claim 1. Matsuo et al, however, makes no distinction between compounds having a perfluoroalkyl group having 5 or less carbon atoms, which is the subject matter of component (d), from compounds having a perfluoroalkyl group

having 6 or more carbon atoms. Particularly, Matsuo et al does not describe or suggest that the component (d) as defined in present claim 1, which has a perfluoroalkyl group having 5 or less carbon atoms, can give advantageous effects achieved by the present invention. $\text{CF}_3(\text{CF}_2)_7\text{C}_2\text{H}_4\text{SiCl}_3$ disclosed in Matsuo et al which is outside the scope of present claim 1 cannot give the effect, for example, of a structure of a functional compound of nanometer to micrometer order that can be produced by a simple application process, and that the properties of the functional compound can be improved.

That is, the cited references make no distinction between compounds having a perfluoroalkyl group having 5 or less carbon atoms and compounds having a perfluoroalkyl group having at least 6 carbon atoms. For this reason alone, the present claims are patentable over the cited prior art.

The rejections should be withdrawn for yet another reason.

Particularly, the Examiner has not identified a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements at issue in the way that the present invention does, and that one of ordinary skill in the art would not have possessed a reasonable expectation of success in making such a combination (a fundamental requirement of *KSR*). Matsuo et al relates to a low reflectance transparent material having antisoiling properties, which comprises a transparent substrate and a multi-layer coating formed thereon (Abstract). There is no discussion in Matsuo et al of forming an alternating line pattern of self-organization organic thin films, and there is no discussion in Matsuo et al of using a coating of Matsuo et al for forming a fine line pattern structure which is the subject matter of Ishida. Namely, the Examiner has failed to set forth a reason that would have prompted a person of ordinary skill in the device/(photo)lithography field to employ a silane compound of Matsuo et al for use in coating

an optical part having no alternating line pattern. Further, it is difficult to understand how one of ordinary skill in Ishida's field of art would have at least a reasonable expectation of success in making such a substitution.

For the above reasons, it is respectfully submitted that the present claims are patentable over the cited prior art, and withdrawal of the foregoing rejections is respectfully requested.

Withdrawal of all rejections, rejoinder of method claims 7 and 8 and allowance of claims 1-5, 7, 8, 15, 16 and 17 is earnestly solicited.

In the event that the Examiner believes that it may be helpful to advance the prosecution of this application, the Examiner is invited to contact the undersigned at the local Washington, D.C. telephone number indicated below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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